



Application No. (if known): 09/915,813

Attorney Docket No.: 01191/100E235-US2

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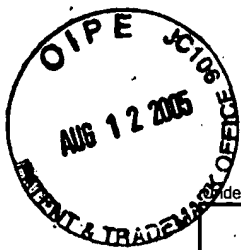
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Response to the Notice of Non-Compliant Appeal Brief (2 pages);

Appelants' Brief on Appeal Under 37 C.F.R. 1.192 (11 pages)

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TRANSMITTAL FORM (to be used for all correspondence after initial filing)	Application Number	09/915,813-Conf. #9938
	Filing Date	July 25, 2001
	First Named Inventor	Peter Ramm
	Art Unit	1631
	Examiner Name	J. S. Brusca
Total Number of Pages in This Submission	Attorney Docket Number	01191/100E235-US2

ENCLOSURES (Check all that apply)		
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Firm Name	DARBY & DARBY P.C.		
Signature			
Printed name	Richard J. Katz		
Date	August 12, 2005	Reg. No.	47,698



File No. 01191/100E235-US2

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Peter Ramm et al.

Application No.: 09/915,813

Confirmation No.: 9938

Filed: July 25, 2001

Art Unit: 1631

For: PROCESS FOR EVALUATING CHEMICAL
AND BIOLOGICAL ASSAYS

Examiner: J. S. Brusca

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO THE NOTICE OF NON-COMPLIANT APPEAL BRIEF

Sir:

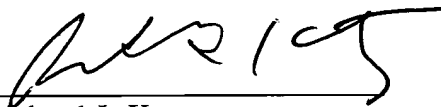
Responsive to the Notice mailed August 5, 2005, entry of the Amended Appeal Brief submitted concurrently herewith is respectfully requested.

The Examiner considered the Appeal Brief filed January 19, 2005 to be non-compliant for not being submitted in the format required by 37 C.F.R. § 41.37(c). Applicants submit that the Amended Appeal Brief, submitted herewith, is fully compliant with the

requirements of 37 C.F.R. § 41.37. Each and every point raised in the Notice of Non-Compliant Appeal Brief, has been addressed in this Amended Appeal Brief.

This response to the Notice of Non-Complaint Appeal Brief, and the Amended Appeal Brief, concurrently submitted herewith, should be considered because they are both being filed within thirty days of the mailing of the Notice and, thus, no fee is due. However, the Commissioner is hereby authorized to charge any fees deemed required in connection with this submittal to Deposit Account No. 04-0100.

Respectfully submitted,




Richard J. Katz
Reg. No. 47,698
Attorney for Applicants

Dated: August 12, 2005

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Dated: _____



In re Patent Application of:
Peter Ramm et al.

Confirmation No.: 9938

Art Unit: 1631

Examiner: J. S. Brusca

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

This is Appellant's brief under 37 C.F.R. §1.192 for the appeal of the final Office Action mailed May 19, 2004 by Examiner John S. Brusca in the above-identified patent application.

As required under § 41.37(a), this brief is filed within two months of the November 19, 2004 Notice of Appeal filed in this case, and is in furtherance of said Notice of Appeal.

This brief contains items under the following headings as required by 37 C.F.R. § 41.37 and M.P.E.P. § 1206:

- I. Real Party In Interest
- II Related Appeals and Interferences
- III. Status of Claims
- IV. Status of Amendments
- V. Summary of Claimed Subject Matter

VI.	Grounds of Rejection to be Reviewed on Appeal
VII.	Argument
VIII.	Claims Appendix
IX.	Evidence Appendix
X.	Related Proceedings Appendix

I. REAL PARTY IN INTEREST

The real party in interest for this appeal is:

GE Healthcare.

Rights in and to this application have been assigned to this party.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

There are 7 claims pending in application, i.e. claims 5-7, 11, 14, 16 and 17. They are reproduced in the **Claims Appendix**. The current status of the claims is as follows:

1. Claims canceled: 1-4, 8-10, 12-13, 15;
2. Claims withdrawn from consideration but not canceled: none;
3. Claims pending: 5-7, 11, 14, 16, and 17;
4. Claims allowed: none;
5. Claims rejected: 5-7, 11, 14, 16, and 17.

approach for deconvolving any mixture of distinct underlying distributions.” (Specification, Rectified Sheet No. 8, line 38 through Sheet No. 9, line 2.) Specifically, the claimed subject matter is a method of treating overlapping distributions within the arrayed data by modeling dual or multiple distributions. A mathematical mixture model is applied to deconvolve distributions and regions of overlap between distributions. (Specification, Rectified Sheet No. 9, lines 4-10.)

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Whether the Examiner erred in holding that claims 5-7, 11, 14, 16 and 17 are unpatentable under 35 U.S.C. §102(a) as anticipated by Chen.

VII. ARGUMENT

The Chen article does not disclose deconvolving overlapping portions of distributions. Therefore, Chen does not disclose each and every feature of the invention of claims 5-7, 11, 14, 16 and 17. Thus, Chen does not anticipate the claimed invention.

This Appeal Brief is being filed in response to the Official Action mailed on May 19, 2004. Claims 5-7, 11, 14, 16 and 17 are pending in this application. The Examiner contends that claims 5-7, 11, 14, 16 and 17 are unpatentable under 35 U.S.C. §102(a) as being anticipated by Chen.

In traversing this rejection, Appellants noted that:

[I]n accordance with the claims, the present invention involves deriving *distributions* of data obtained from physical measurements and deconvolving overlapping portions of such *distributions*. There is not the slightest suggestion in Chen that any derived data *distributions* might overlap, that deconvolving overlapping portions should be performed, or that it would be of any benefit. Accordingly, Chen does not teach or suggest primary features of the present invention and could not anticipate or render the present invention obvious.

(Emphasis added.)

In response, the Examiner argued:

The [Appellants] state that Chen et al. does not show the claimed step of deconvolving overlapping *data*. Chen et al. shows a method of resolving levels of two differently labeled fluorescent probes from the same location of an array after hybridization of two probes to the array. Chen et al. therefore deconvolves *data* consisting of the levels of two probes that physically overlap on the array. The claimed method is not interpreted to require more than that

(Emphasis added.)

Thus, the Examiner misinterprets the claims and takes the position that because Chen discloses the step of resolving overlapping data, it somehow anticipates the invention. However, the claims recite the step of “deconvolving overlapping portions of *distributions*.” (Emphasis added.) Moreover, from the language of the claim, it will be appreciated that the distributions relate to the step of “deriving distributions of data obtained from physical measurements.” A distribution of data is not the same thing as the data itself.

The McGraw-Hill Dictionary of Scientific and Technical Terms defines “distribution” in the statistical context (the present context) as:

For a discrete random variable, a function (or table) which assigns to each possible value of the random variable the probability that this value will occur.

(McGraw-Hill Dictionary of Scientific and Technical Terms, S. P. Parker, Ed., 5th ed., page 596 (1994))

The fact that two particular measurements on different probes may overlap says absolutely nothing about the characteristics of their *distributions*. There is not the slightest suggestion in Chen that any derived data *distributions* might overlap, that deconvolving overlapping portions should be performed, or that it would be of any benefit. The fact that two samples might overlap has absolutely no significance in this regard.

Furthermore, referring to pages 369-370 of Chen, it is clear that all of the samples are assumed to have the same probability distribution. There is not the slightest suggestion that samples might be from two different distributions that overlap and need to be deconvolved.

In addition, convolution is not simply overlapping. Appellants have made of a record a copy of an internet page (http://www.all-science-fair-projects.com/science_fair_projects_encyclopedia/Convolution) in which convolution is defined simply. Specifically, convolution is an operation which is performed between two *functions* and it produces a third *function*. This third function represents the overlap between the first function and the reverse, translated version of the second function. The definition provided notes that a convolution is a “kind of very general moving average.” So, the invention deconvolves an effective moving average of an overlapping portion of two distributions.

Thus, knowing that two samples overlap tells us nothing about their probability distributions (functions), tells us nothing about whether the samples have overlapping probability distributions which are convolved, and certainly does not provide the slightest suggestion that the deconvolution operation be performed on the overlapping distributions of two variables to achieve anything of value.

The Appellants have requested that the Examiner specifically point out where in Chen there is the slightest suggestion of *distributions* needing to be deconvolved. However, he has never responded to this or even addressed the issue.

In the November 4, 2004 Advisory Action, the Examiner states that

[t]he [Appellants] refer to a particular narrow definition of convolution. However it is not apparent from the specification that the term means anything other than the ordinary meaning of the term which is coiled or twisted with one part over another.

(Advisory Action, Item 5, continuation sheet.)

For all of the reasons set forth above, the rejections of claim 5-7, 11, 14, 16, and 17 should be reversed. Appellants respectfully request that the application be remanded to the Primary Examiner with an instruction to withdraw the 35 U.S.C. § 102(a) rejection, and pass the case to allowance.

Please charge any fee, except for the Issue Fee, that may be necessary for the continued pendency of this application to our Deposit Account No. 04-0100.

Dated: August 12, 2005

Respectfully submitted,

By

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APPENDIXES

CLAIMS APPENDIX

The following is a copy of the claims involved in the appeal:

5. (Original) A method for discriminating among response classes of physical measurements obtained in hybridization arrays, comprising the steps deriving distributions of data obtained from the physical measurements and deconvolving overlapping portions of distributions.

6. (Original) The method of claim 5 wherein one of dual and multiple distributions derived from a measured array are modeled by mixture modeling.

7. (Original) The method of claim 5 wherein mixture modeling is used to determined the probability that any discrete array element falls within one of the modeled distributions.

11. (Original) The method of claim 7 used to evaluate physical measurements obtained from biological and chemical assays conducted in one of substrates, substrates containing wells, and test tubes.

14. (Original) The method of claim 6 wherein mixture modeling is used to determine the probability that any discrete array element falls within one of the modeled distributions.

16. (Original) The method of claim 5, used to evaluate physical measurements obtained from biological and chemical assays conducted on one of substrates, substrates containing wells, and test tubes.

17. (Original) The method of claim 6, used to evaluate physical measurements obtained from biological and chemical assays conducted on one of substrates, substrates containing wells, and test tubes.

RELATED PROCEEDINGS APPENDIX

There are related proceedings for this matter.